

**DESCRIPTION**

<b>Source</b>	<i>Spodoptera frugiperda</i> , Sf 21 (baculovirus)-derived		
	Rat Nogo-A (Arg1026-Leu1090) Accession #Q9JK11	IEGRMDP	Mouse IgG <sub>2A</sub> (Glu98-Lys330)
	N-terminus		C-terminus
<b>N-terminal Sequence Analysis</b>	Arg1026		
<b>Structure / Form</b>	Disulfide-linked homodimer		
<b>Predicted Molecular Mass</b>	34.5 kDa (monomer)		

**SPECIFICATIONS**

<b>Activity</b>	Measured by its ability to inhibit neurite outgrowth of dissociated E13 chick embryonic dorsal root ganglia (DRG) neurons. Able to significantly inhibit neurite outgrowth when immobilized as a 3 µL droplet containing 200 ng on a nitrocellulose-coated microplate.
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the protein by the LAL method.
<b>Purity</b>	>90%, by SDS-PAGE under reducing conditions and visualized by silver stain.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 100 µg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 3 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

**BACKGROUND**

Rat Nogo-A is a member of the reticulon family of transmembrane proteins. This family is characterized by the presence of a nonsignal sequence-containing N-terminus, a topologically conserved approximately 200 amino acid (aa) C-terminus that contains two transmembrane domains and an ER-retention motif, and a punctate intracellular distribution within the ER that is reminiscent of a reticulum (1, 2). Nogo-A in rat exists in four isoforms (3 - 5). The full length rat Nogo-A is 1163 aa in length and contains a 989 aa N-terminus, a 21 aa transmembrane segment, a 94 aa connecting "loop", a second 21 aa transmembrane segment, and a 38 aa C-terminus. Three areas are of particular interest. One is a stretch of 66 aa within the 94 aa transmembrane connecting loop (SWISSPROT defines this region as being 94 aa in length while the original cloning papers identified it as being 66 aa in length). This segment is reported to bind to the GPI-linked Nogo receptor/p75 complex on axons and induce growth cone collapse (6 - 8). Two other areas in the N-terminus have also been discovered to have bioactivity (6, 9, 10). Amino acids 59 - 172 are reported to block fibroblast spreading, while aa 544 - 725 block neurite outgrowth and block fibroblast spreading (6, 10). The exact topology of Nogo-A is unclear. With two transmembrane segments, the N- and C-termini may be extracellular with the "loop" region intracellular, or the situation could be reversed (11, 12). Alternatively, the loop region and N-terminus may be on the same side of the membrane (6). Nogo-A is expressed in neurons, endothelial cells, oligodendrocytes, fibroblasts and myoblasts (10, 13, 14). Rat Nogo-A is 78% aa identical to human Nogo-A overall, with 98% aa identical in the loop region and 81% aa identity in the 544 - 725 aa segment.

**References:**

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